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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/692,011

10/24/2003

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Q78108

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23373 7590 01/29/2009  
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EXAMINER

JUNG, UNSU

ART UNIT

PAPER NUMBER

1641

MAIL DATE

DELIVERY MODE

01/29/2009

PAPER

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**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte* KENJI NAKAJIMA

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Appeal 2008-5578  
Application 10/692,011  
Technology Center 1600

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Decided: January 29, 2009

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Before DEMETRA J. MILLS, LORA M. GREEN, and  
FRANCISCO C. PRATS, *Administrative Patent Judges*.

GREEN, *Administrative Patent Judge*.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 2, 3, 5, 6, 8, 9, 11, and 12.<sup>1</sup> We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> Claims 1, 4, 7, 20, and 13-20 are also pending, but stand withdrawn from consideration (App. Br. 4).

## STATEMENT OF THE CASE

The claims are directed to an assay method using a biochemical analysis unit. Claim 2 is representative of the claims on appeal, and reads as follows:

2. An assay method using a biochemical analysis unit, comprising the steps of:

i) obtaining a biochemical analysis unit provided with a plurality of porous adsorptive regions, to which ligands or receptors have been bound respectively, said porous adsorptive regions comprising holes, filled with a porous material, provided in a base plate, and

ii) performing a specific binding detecting process comprising the steps of:

a) forcibly causing a receptor or a ligand to flow such that the receptor or the ligand flows through each of the holes of the biochemical analysis unit, the receptor or the ligand being thus subjected to specific binding with the bound ligands or the bound receptors, the receptor or the ligand being thereby specifically bound to at least one of the bound ligands, or to at least one of the bound receptors, and

b) detecting the receptor or the ligand, which has thus been specifically bound to at least one of the bound ligands or at least one of the bound receptors, by the utilization of a labeling substance, a liquid being forcibly caused to flow, such that the liquid flows through each of the holes of the biochemical analysis unit, during the specific binding detecting process,

wherein bubble removing processing for removing bubbles, which are present in the liquid, from the liquid is performed during the flowing of the liquid.

The Examiner relies on the following references:

Clark	US 5,358,691	Oct. 25, 1994
Hess	US 6,716,629 B2	Apr. 6, 2004

We affirm.

### ISSUE

The Examiner contends that claims 2, 3, 5, 6, 8, 9, 11, and 12 are obvious over the teachings of Hess and Clark.

Appellant contends that the ordinary artisan would not have combined Clark with Hess to arrive at the claimed invention.

Thus, the issue on Appeal is: Has Appellant demonstrated that the Examiner erred in combining Hess and Clark to arrive at the claimed invention?

### FINDINGS OF FACT

FF1 The Examiner rejects claims 2, 3, 5, 6, 8, 9, 11, and 12 under 35 U.S.C. § 103(a) as being obvious over the teachings of Hess and Clark (Ans. 4). As Appellant does not argue the claims separately, we focus our analysis on claim 2, and claims 3, 5, 6, 8, 9, 11, and 12 stand or fall with that claim. 37 C.F.R. § 41.37(c)(1)(vii).

FF2 The Examiner finds that Hess teaches all of the limitations of claim 2 (*id.* at 4-5), except for “the step of performing a bubble removing or dissolving process during the flowing of the liquid.” (*Id.* at 5.)

FF3 The Examiner also finds that Hess teaches that “pressure can be applied using mechanical or optical pressure.” (*Id.* at 8 (citing Hess col. 23, ll. 17-20).) Thus, the Examiner finds that Hess employs “pressure differential in a fluidic system in order to provide fluid flow.” (Ans. 8.)

FF4 Hess also teaches the use of a syringe bank for the transfer of reagents (*see, e.g.*, col. 65, Example 24).

FF5 Clark is cited by the Examiner for teaching “the step of automatically flushing bubbles out of a fluidics system, in order to prevent the presence of air bubbles from affecting the precision and accuracy of the dispenser.”

(Ans. 5-6 (citing Clark col. 21, ll. 7-48).)

FF6 The Examiner concludes:

It would have been obvious to one of ordinary skill in the art to modify the method of Hess et al. with the step of automatically flushing bubbles out of the fluidics system, as taught by Clark et al., in order to prevent the presence of air bubbles from affecting the precision and accuracy of the dispenser. The advantage of providing more accurate dispensing of solution provides the motivation to combine the bubble-extracting step of Clark et al. in the method of Hess et al. In addition, one of ordinary skill in the art at the time of the invention would have had a reasonable expectation of success in including the bubble extracting step of Clark et al. in the method of Hess et al., since Hess et al. teach the step of dispensing fluid into an array, and the bubble extracting process of Clark et al. would provide a more effective way of dispensing the fluid.

(Ans. 6.)

#### PRINCIPLES OF LAW

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) secondary considerations of nonobviousness, if any. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The Supreme Court has recently emphasized that “the [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of

the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, \_\_\_, 127 S. Ct. 1727, 1741 (2007). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 1739.

If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at 1740. Moreover, an “[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d 297, 301 (CCPA 1982).

## ANALYSIS

Appellant argues that the ordinary artisan would not have been motivated to combine Clark with Hess, as Clark teaches that the issue with bubbles arises with the use of a syringe, whereas Hess teaches that the array may be loaded by applying pressure across the platen (App. Br. 15-16). Thus, Appellant asserts, the disclosure of Hess does not relate to the use of a syringe, and, moreover, Hess does not teach that there are problems with bubbles when pressure is applied across the platen (*id.* at 16).

Appellant argues further that there is no reasonable expectation of success, as Hess discloses the use of pressure across the platen, and not a

syringe, and the “Examiner fails to explain why or how Clark’s bubble-removal process would work in Hess’ system.” (*Id.* at 17.)

We conclude that the Examiner has the better position (*see, e.g.*, FF6). As noted by the Examiner, Hess teaches that pressure can be applied as a solid pin acting as a piston, which is the same mechanical principle as used in the syringe of Clark (Ans. 8). Moreover, Hess does specifically teach using a bank of syringes to deliver reagents to the platen (FF4). Thus, as further noted by the Examiner, the ordinary artisan would understand that the fluidic system could have issues with bubbles, which bubbles would affect the precision and accuracy of the fluid dispenser, and that Clark’s bubble removal step would apply equally to the pressure-based system and method of using it taught by Hess (*see* Ans. 8). Finally, Appellant has provided no evidence demonstrating that it would be beyond the level of skill in the art to apply a bubble-removing step of Clark to the pressure-based system and method of using it taught by Hess. Note that arguments of counsel cannot take the place of evidence in the record. *In re Scarbrough*, 500 F.2d 560, 566 (CCPA 1974).

#### CONCLUSIONS OF LAW

We conclude that Appellant has not demonstrated that the Examiner erred in combining Hess and Clark to arrive at the claimed invention.

The rejection of claims 2, 3, 5, 6, 8, 9, 11, and 12 under 35 U.S.C. § 103(a) as being obvious over the teachings of Hess and Clark is thus affirmed.

Appeal 2008-5578  
Application 10/692,011

TIME LIMITS

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cdc

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